

Work Order ID 68646

Page 1

Tuesday, April 19, 2011 1:00:05 PM

Item ID: D412-742-043

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

ME

Date:

11-04-19

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID
/Tool #
Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



DC

DOCUMENT CONTROL

Document Control

Memo

0.00

If D412-742-043 is a W/O on it's own,
Photocopy bluefile and create labels per PPP D412-742-043 CHG004*N/A*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68646

Tuesday, April 19, 2011 1:00:06 PM



Page 2

Item ID: D412-742-043

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Float Skidtube

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00



HandFinish

HandFinishing

Memo

0.00

Hand Finishing

1-Install tubes together and seal them all the way around using Sikaflex
241/291. Ensure tube ends line-up with saddle holes for proper alignment. using
7/16" "T" Pins.
A/R ☐ Sikaflex-241/-291 ☒ M116945
Expiry date: ☐ 12/01

2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against
wearplate, then topped with the SS washer. Seal all bolts with sikaflex except
ones with inserts on inside of tube, hand tighten only bolts with no sikaflex.

A/R ☐ Sikaflex-241/-291 ☒ M116945
Expiry date: ☐ 12/01

3-Remove "T" pins once sikaflex is dry.

4-Coat all exposed hardware with LPS Procyon. Remove any excess off with
MEK degreaser.

A/R ☐ LPS Procyon ☒ M114596

1 ϕ M 4/06/13

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Page 3

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Setup Start

Revision ID:

Stop

Item Name: Replacement Float Skidtube

Start Date: 4/19/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

130

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D412-742-043

Location:

PPP Rev:

PPR 68646

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

MF

11-06-14

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

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Picklist Print

Tuesday, April 19, 2011 12:59:59 PM

Page 1

Work Order ID: 68646



Parent Item: D412-742-043



Parent Item Name: Replacement Float Skidtube

Start Date: 4/19/2011

Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev A 05.10.13 New Issue KJ/JLM
IPP Rev B 06.02.13 ECN 773 dwg @ rev.D EC
IPP Rev:C 07-05-28 As per Rev F JLM
IPP Rev:D 07-12-04 ECN 1072 DD verified by:JLM
IPP Rev:E 08-09-08 ecn 08-510 DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C4A 		Purchased	No			110	Each	2,358.000	24	24			
BOLT													

Location	Loc Qty	Loc Code
ST350	2358	
116924	358	
117094	1000	X24
117313	1000	

AN3C6A 		Purchased	No			110	Each	224.0000	12	12			
BOLT													

Location	Loc Qty	Loc Code
FP-A	1	
111982	1	
ST351	223	
111982	2	
116419	71	
116549	50	X12
116704	100	

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Picklist Print

Page 2

Tuesday, April 19, 2011 1:00:00 PM

Work Order ID: 68646

Parent Item: D412-742-043


Parent Item Name: Replacement Float Skidtube

Start Date: 4/19/2011

Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C7A Purchased No 110 Each 171.0000 8 8

 BOLT

Location	Loc Qty	Loc Code
ST351	171	
113149	30	
116169	41	
117313	100	

AN960C10L NAS1149C0332 Purchased No 110 Each 0.0000 44 44


 washer

D3391-021 Manufactured No 110 Each 0.0000 1 1


 Fwd Tube Assembly

D3391-023 Manufactured No 110 Each 0.0000 1 1


 Mid Tube Assembly

D3391-025 Manufactured No 110 Each 1.0000 1 1


 Aft Tube Assembly

Location	Loc Qty	Loc Code
FP	1	
48122	1	

Tuesday, April 19, 2011 1:00:00 PM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
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Tuesday, April 19, 2011 1:00:00 PM

Page 3

Work Order ID: 68646

Parent Item: D412-742-043

Parent Item Name: Replacement Float Skidtube

Start Date: 4/19/2011

Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-1

Manufactured No

110

Each

17.0000

1

1



u1106109

Wearshoe

Location

Loc Qty

Loc Code

FG

2

33798

2

FP019

15

58823

1

64747

14

u1

D3564-3

Manufactured No

110

Each

14.0000

1

1



u1106109

Wearshoe

Location

Loc Qty

Loc Code

FG

2

33764

2

B69290

u1

FP019

12

62835

3

64748

5

66000

4

D3564-5

Manufactured No

110

Each

24.0000

1

1



u1106109

Wearshoe

Location

Loc Qty

Loc Code

FG

2

34806

2

FP019

22

66551

10

67588

12

B68960

u1

Tuesday, April 19, 2011 1:00:00 PM

Shop Packet Print

Page 3

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Picklist Print

Tuesday, April 19, 2011 1:00:00 PM

Page 4

Work Order ID: 68646



Parent Item: D412-742-043



Parent Item Name: Replacement Float Skidtube

Start Date: 4/19/2011

Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

D3566-1 Manufactured No

110 Each 36.0000 2 2



Gasket

u106104

Location

Loc Qty

Loc Code

FP015

36

1368924

v2

68344

36

D3566-5 Manufactured No

110 Each 27.0000 1 1



Gasket

u1106104

Location

Loc Qty

Loc Code

FP015

27

1368961

v1

66552

5

67589

22

Tuesday, April 19, 2011 1:00:00 PM

Shop Packet Print

Page 4

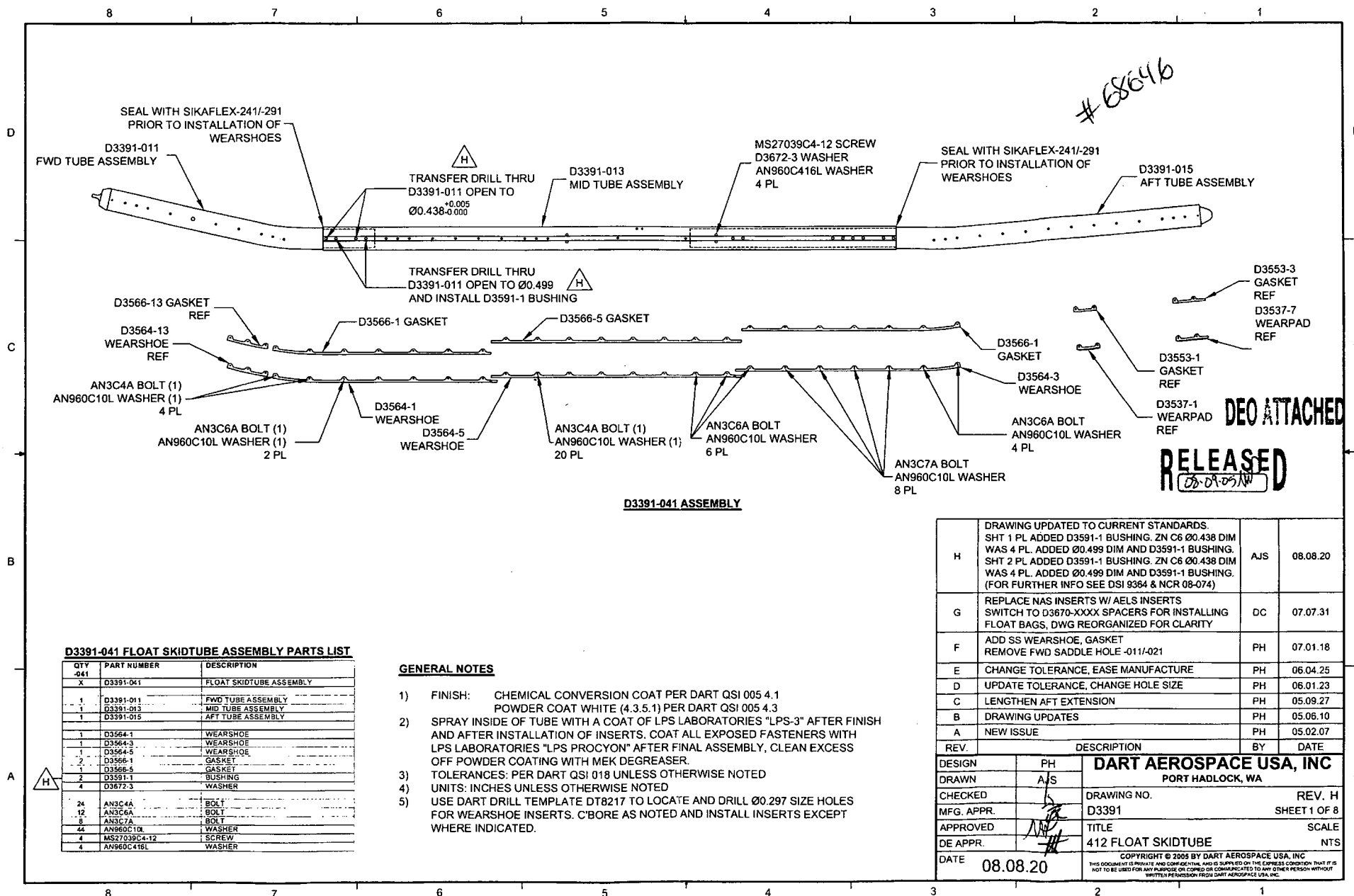
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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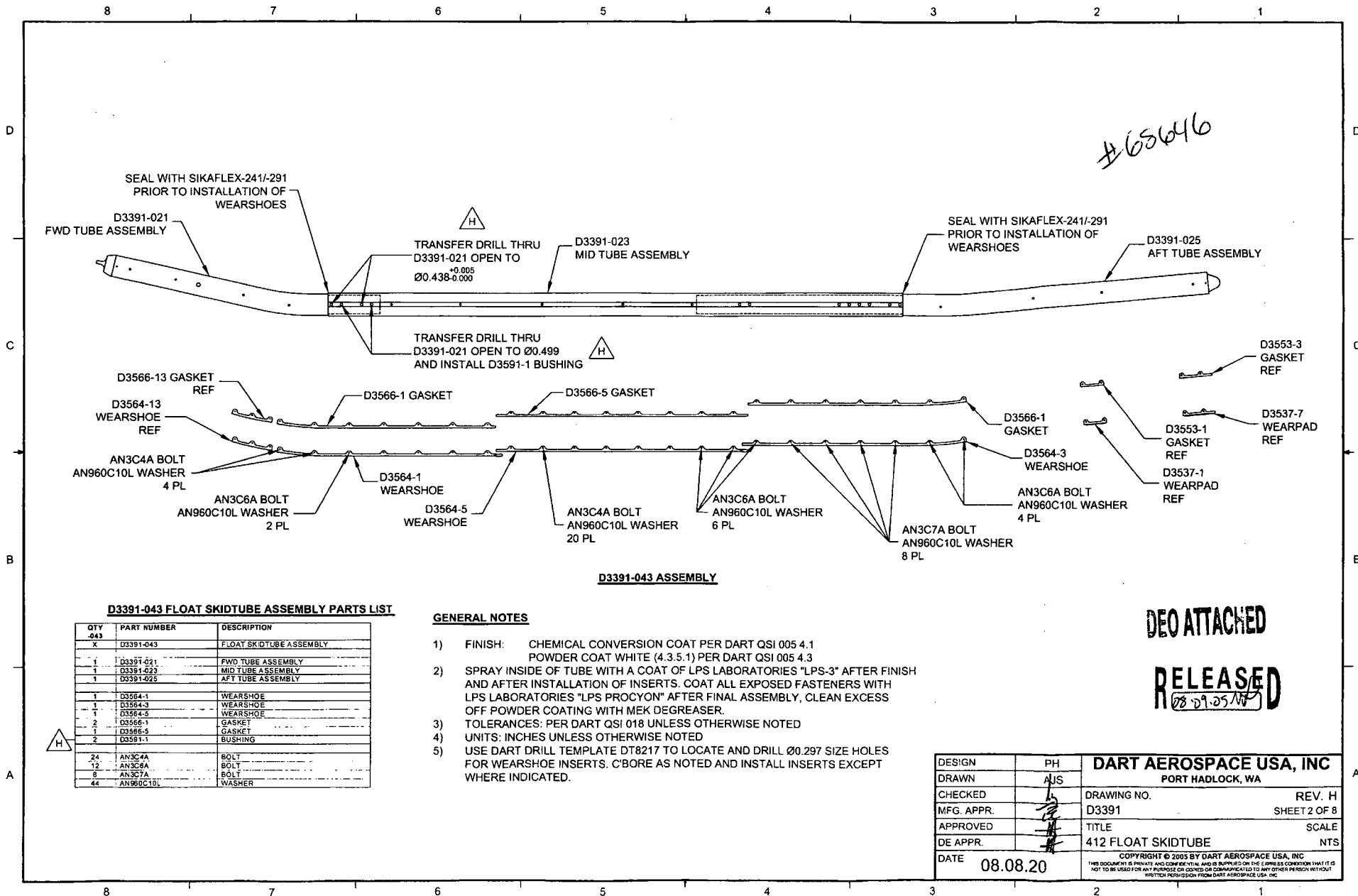
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NOTE: Date & initial all entries

#65646



D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C-BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DEO ATTACHED

RELEASED
08 09 25 AM

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
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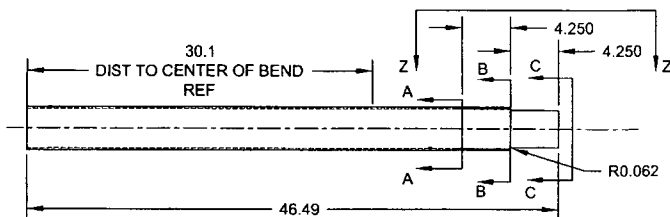
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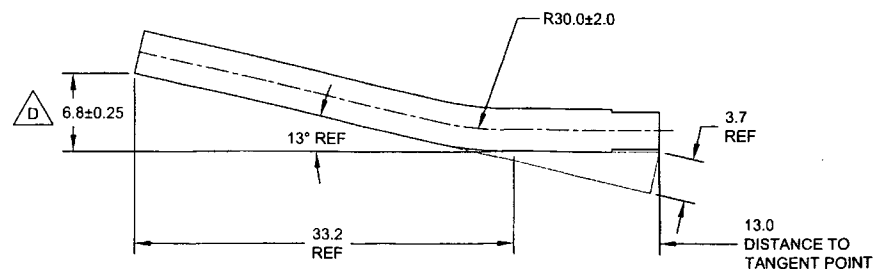
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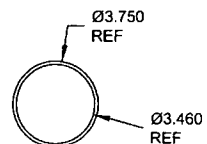
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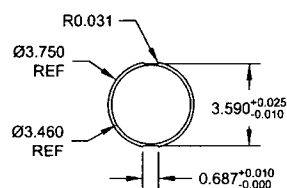
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



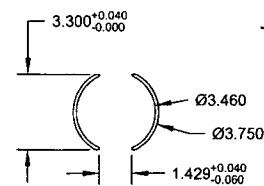
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



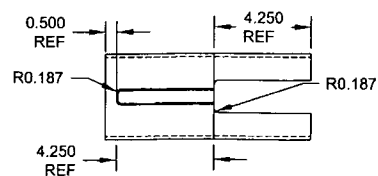
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

#68696

DEO ATTACHED
RELEASED
08-05-11

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AUS	PORT HADLOCK, WA	
CHECKED		DRAWING NO. D3391	REV. H SHEET 3 OF 8
MFG. APPR.		TITLE	SCALE
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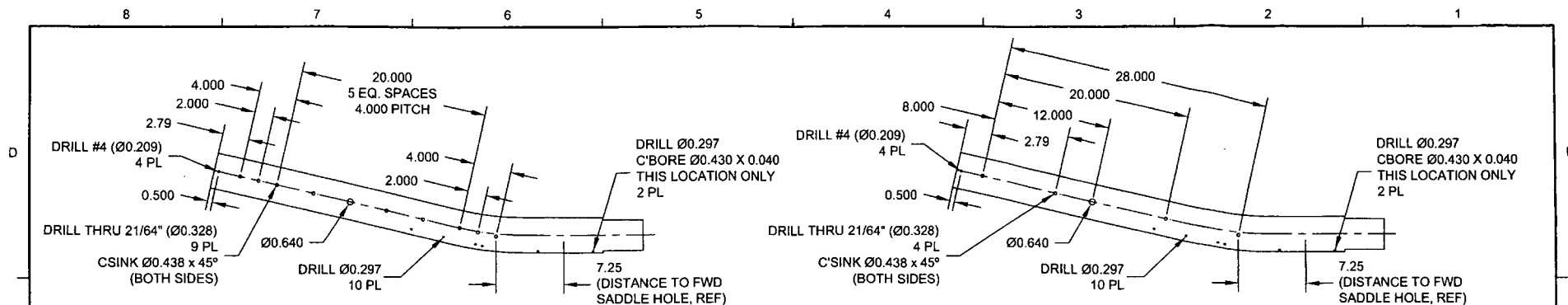
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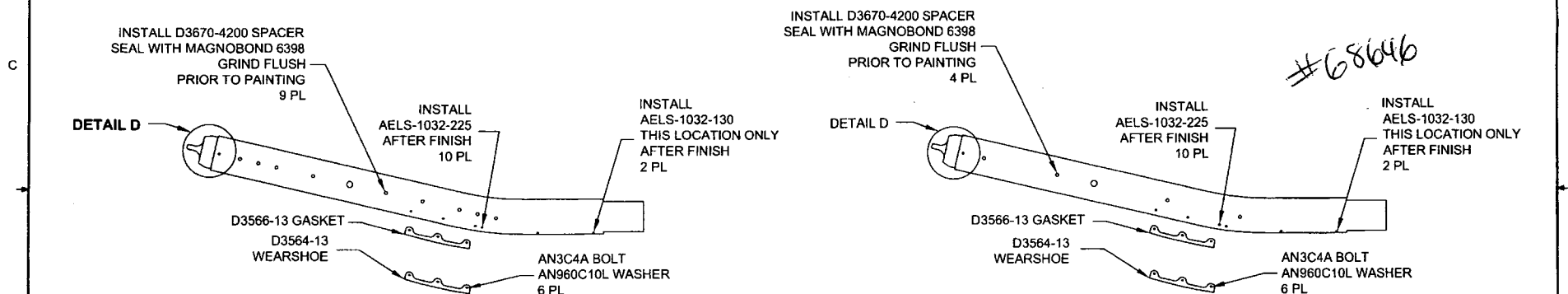
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D3391-011 DRILLING DETAIL

D3391-021 DRILLING DETAIL



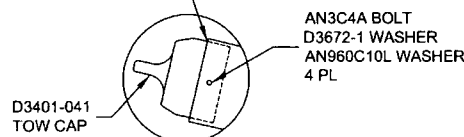
D3391-011 ASSEMBLY DETAIL

D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

SEAL WITH
SIKAFLEX-241/-291



DETAIL D
SCALE 2X

DEO ATTACHED

RELEASED
08-09-25-11

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CHECKED			DRAWING NO.	REV. H
MFG. APPR.			D3391	SHEET 4 OF 8
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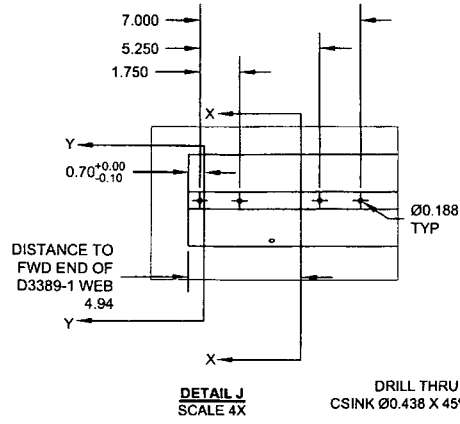
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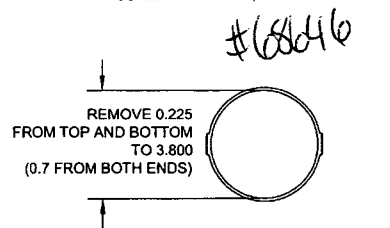
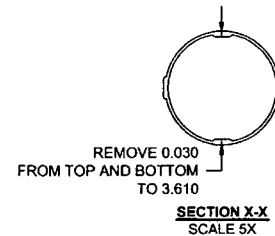
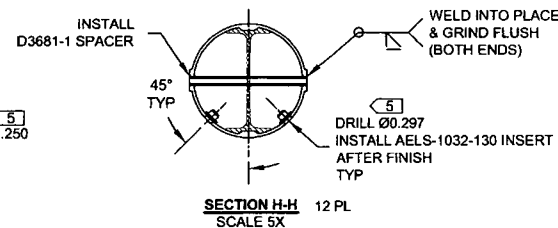
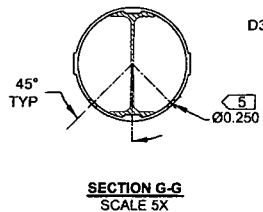
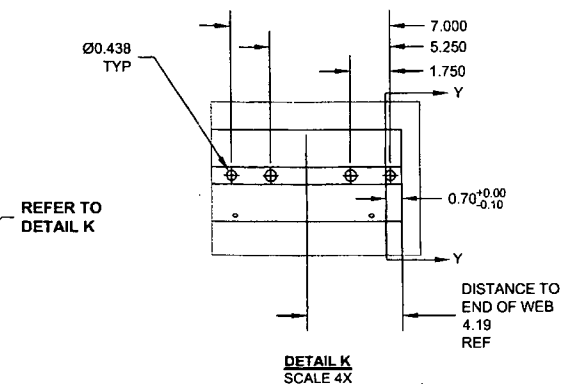
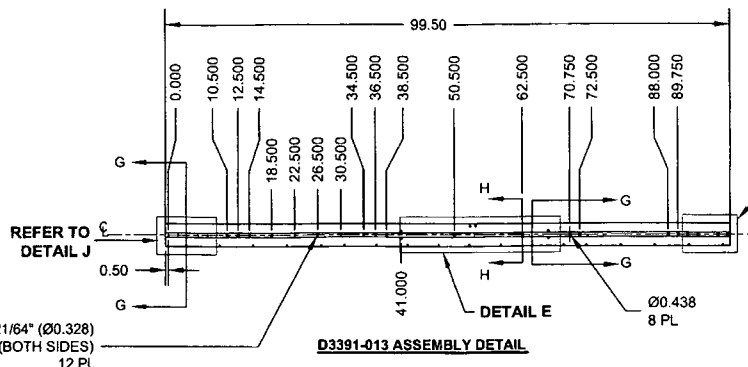
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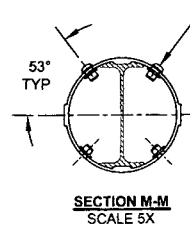
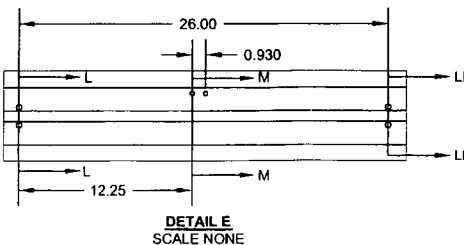


DRILL THRU 21/64" (Ø0.328)
CSINK Ø0.438 X 45° (BOTH SIDES)
12 PL

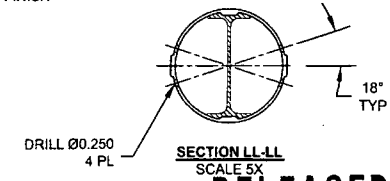


D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-09 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL



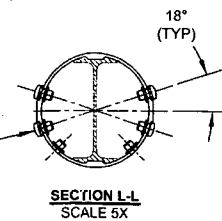
DEO ATTACHED

RELEASED

D3391-013 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004

DRILL Ø0.391
INSTALL ALS4-428-165 INSERT
MS27039C4-08 SCREW
D3672-3 WASHER
AN960C416L WASHER
AFTER FINISH
4 PL



DESIGN	PH	DART AEROSPACE USA, INC	
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MFG. APPR.		D3391	SHEET 5 OF 8
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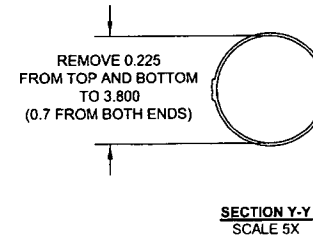
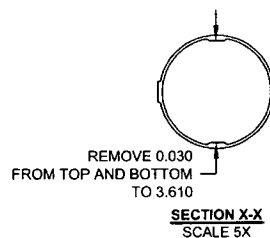
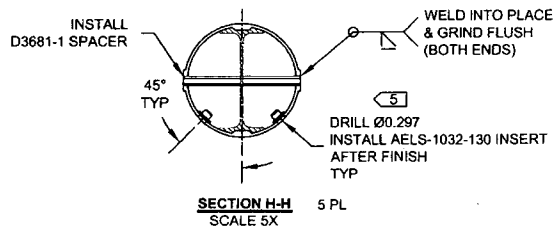
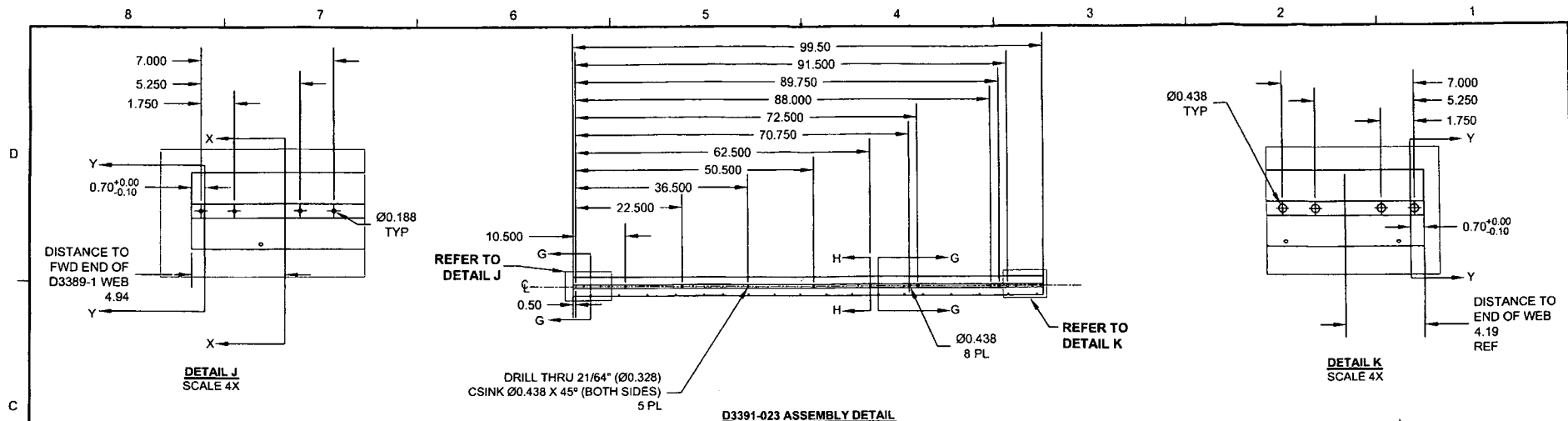
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- WELDING: PER DART QSI 004

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08-09-05-11

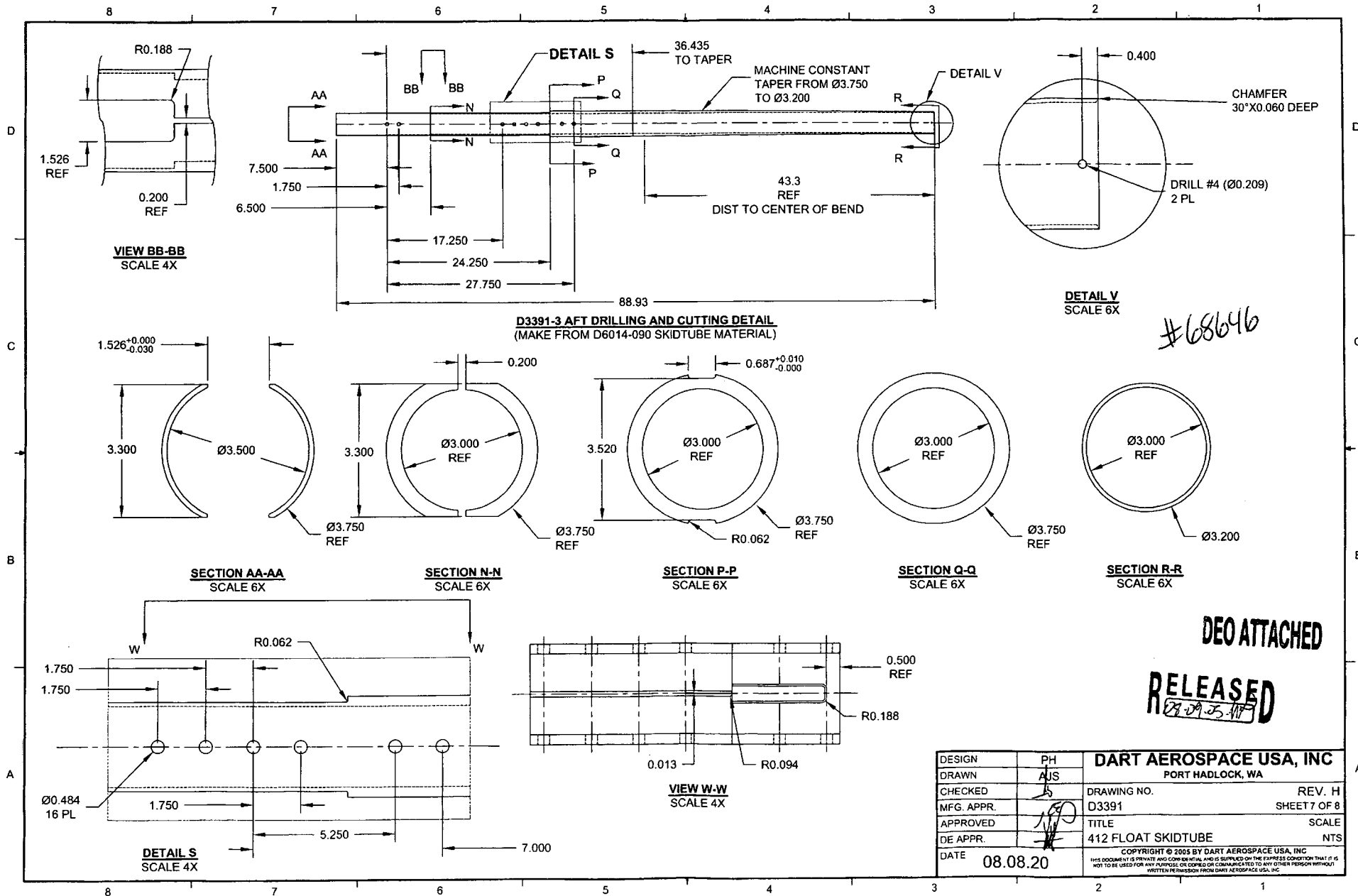
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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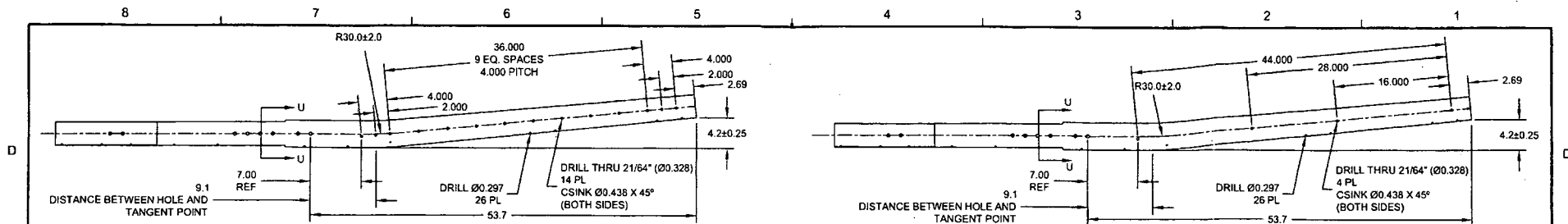
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

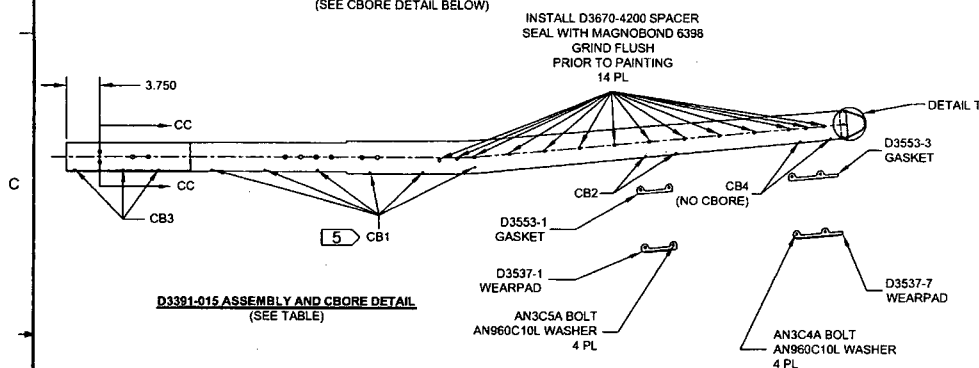
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

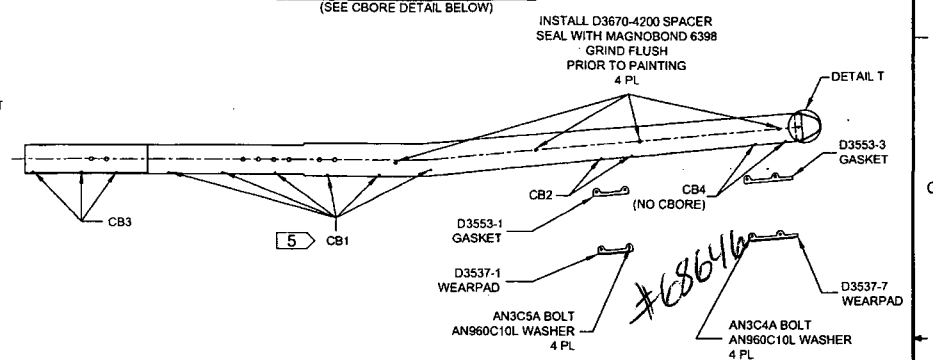


D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)

D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



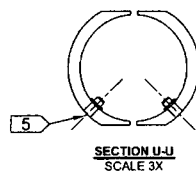
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



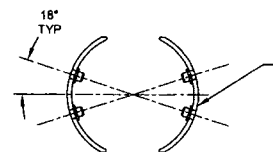
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

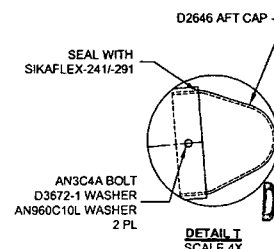


SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X

DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL



DETAIL T
SCALE 4X

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED	JA	DRAWING NO.	REV. H
MFG. APPR.	JE	D3391	SHEET 8 OF 8
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RELEASED
08-09-05-10

DEO ATTACHED

DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>h</i>	MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>		DE APPR. <i>h</i>		
DATE 09.09.23	DATE <i>06.09.24</i>	DATE <i>09/09/25</i>	DATE <i>09/09/30</i>		DATE <i>09/09/30</i>		

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
 OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
 2010-02-02

MP

#68646

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